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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,660	01/08/2002	Kazuo Miyaguchi	XA-9120A	9810

7590 05/16/2003

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EXAMINER

LEWIS, TISHA D

ART UNIT

PAPER NUMBER

3681

DATE MAILED: 05/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/038,660

Applicant(s)

MIYAGUCHI ET AL.

Examiner

TISHA D. LEWIS

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2 and 4-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 April 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_.

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### **DETAILED ACTION**

The following is a response to the amendment received on April 7, 2003, which has been entered.

#### ***Drawings***

The corrected or substitute drawings were received on April 7, 2003. These drawings are approved.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 5, 7-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agari in view of Grolmann et al ('806). As to claims 1, 2 and 11, Agari discloses a linear motion device including:

- an outer member (1),
- an inner member (2) facing the outer member via a gap,
- a plurality of balls (7) disposed between the members,
- a plurality of spacers (50), the outer member being slidable to the inner member, the spacer having concave surfaces facing two opposing balls (Figure 5),
- a central portion (52 via 54) of the concave surfaces being diagonally rectilinear to an outer portion (55) of the spacer, but the outer portion is not contacting the balls.

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Grolmann et al discloses a spacer for a bearing assembly having a concave surface for balls wherein the surface has a frusto-conical shape with an outer portion forming line contact with the balls.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the spacer of Agari in view of Grolmann et al to provide a contacting surface between the spacer and ball that can keep the ball from slipping away from the concave surface of the spacer.

As to claims 4 and 8, Agari discloses the spacer formed as an integral member.

As to claim 7, Agari discloses the central portion (52) of the spacer (50) perpendicular to centers between the two opposing balls wherein the outer portion (55) is diagonally extending from opposite ends of the central portion to an edge of the spacer (via 53).

As to claims 5 and 9, Agari discloses a spacer between opposing balls for a linear motion device, but does not disclose as to the material of the spacers.

Grolmann et al discloses a spacer for placement between opposing balls using an elastic material which can be formed from a plastic.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to design the spacers of Agari from plastic in view of Grolmann et al to have self lubricating properties from the plastic.

Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agari in view of Grolmann et al as applied to claims 1 and 2 above, and further in view

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of Kaiser et al ('243). Agari discloses a spacer between opposing balls for a linear motion device, but does not disclose as to the material of the spacers.

Grolmann et al discloses a spacer for placement between opposing balls, but only discloses an elastic material for the spacer.

Kaiser et al discloses a spacer (1) for a rolling bearing which can be made of different materials including metal (column 2, lines 56-58).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to design the spacers of Agari and Grolmann et al from metal in view of Kaiser et al to have high strength properties from the metal to resist high heat or wear.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1, 2 and 4-11 have been considered but are moot in view of the new ground(s) of rejection.

As to patentability of the claims, the examiner suggest if possible, applicant give more detail as to what is meant by the term "line contact". It seems that from the drawings and specification that there is no actual line contact, but instead, a point of contact between the spacer and balls.

### **FACSIMILE TRANSMISSION**

Submission of your response by facsimile transmission is encouraged. Group 3600's facsimile number is **(703) 305-3597**. Recognizing the fact that reducing cycle time in the processing and examination of patent applications will effectively increase a patent's term, it is to your benefit to submit responses by facsimile transmission whenever permissible. Such submission will place the response directly in our examining group's hands and will eliminate Post Office processing and delivery time as well as the PTO's mail room processing and delivery time. For a complete list of correspondence not permitted by facsimile transmission, see MPEP 502.01. In general, most responses and/or amendments not requiring a fee, as well as those

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requiring a fee but charging such fee to a deposit account, can be submitted by facsimile transmission. Responses requiring a fee which applicant is paying by check **should not be** submitting by facsimile transmission separately from the check.

Responses submitted by facsimile transmission should include a Certificate of Transmission (MPEP 512). The following is an example of the format the certification might take:

I hereby certify that this correspondence is being facsimile transmitted to  
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\_\_\_\_\_  
(Signature)

If your response is submitted by facsimile transmission, you are hereby reminded that the original should be retained as evidence of authenticity (37 CFR 1.4 and MPEP 502.02). Please do not separately mail the original or another copy unless required by the Patent and Trademark Office. Submission of the original response or a follow-up copy of the response after your response has been transmitted by facsimile will only cause further unnecessary delays in the processing of your application; duplicate responses where fees are charged to a deposit account may result in those fees being charged twice.


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TISHA D. LEWIS whose telephone number is 703-305-0921. The examiner can normally be reached on M-Thur 8 AM TO 3 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, CHARLES A. MARMOR can be reached on 703-308-0830. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3597 for regular communications and 703-305-3597 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-2168.

  
Tisha D. Lewis  
Patent Examiner  
AU 3681  
May 15, 2003